

EMPLOYEE				
NAME	DEPT	MGRID	SALARY	BONUS

(C1) NAME ≠ NULL  
 (C2) DEPT = “US\*”  
 (C3) BONUS ≤ 0.4 × SALARY  
 (C4) FOREIGN KEY (DEPT, MGRID)  
 REFERENCES MANAGER (DEPT, MGRID)  
 (C5) (DEPT = “USSales”) ⇒ SALARY ≤ MGR  
 (DEPT, MGRID) . SALARY

(C6) NAME ≠ NULL  
 (C7) DEPT = “US\*”  
 (C8) 500 ≤ MGRID ≤ 999  
 (C9) 100000 ≤ SALARY ≤ 200000

Figure 1

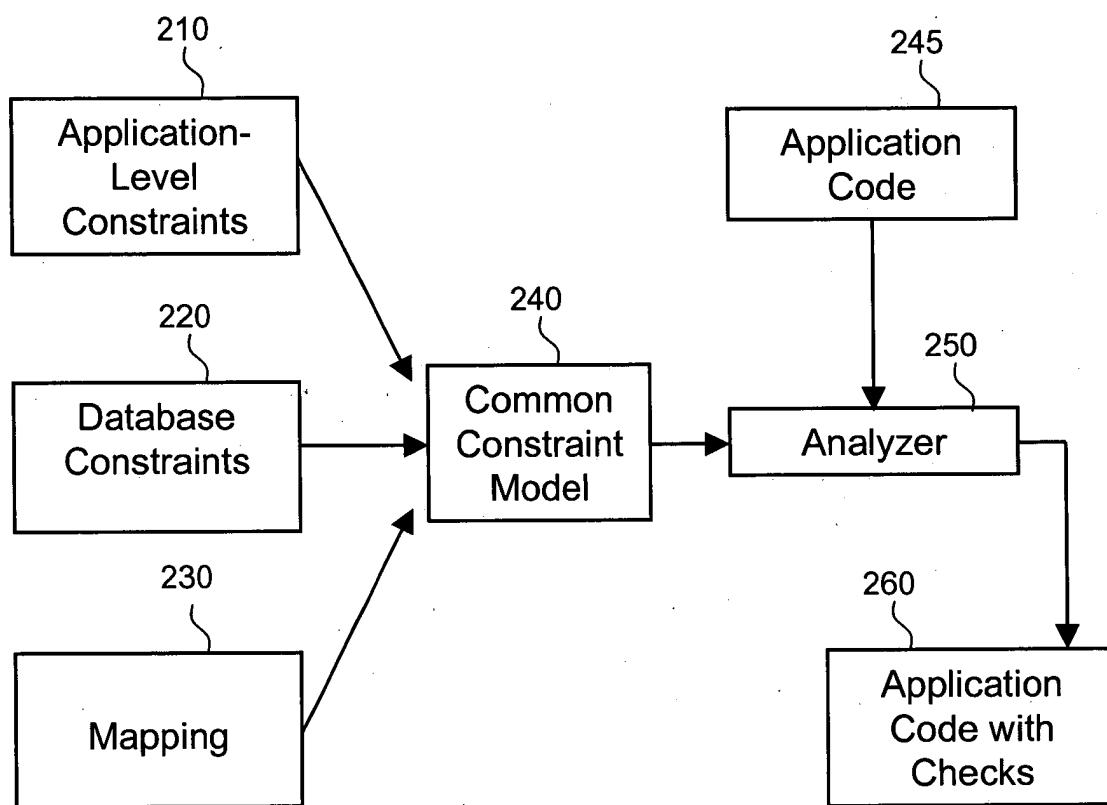
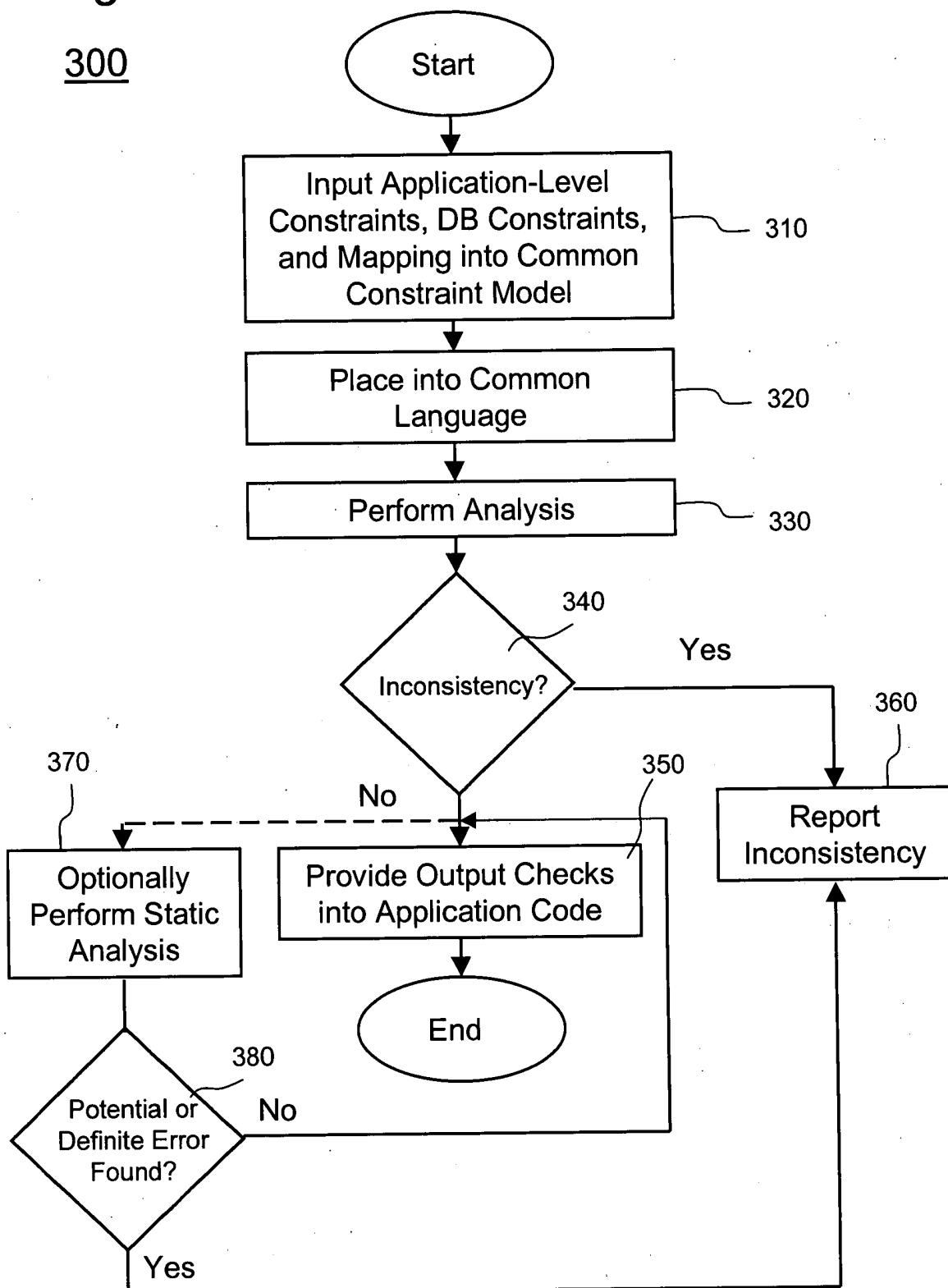
200

Figure 2

Figure 3

300



400

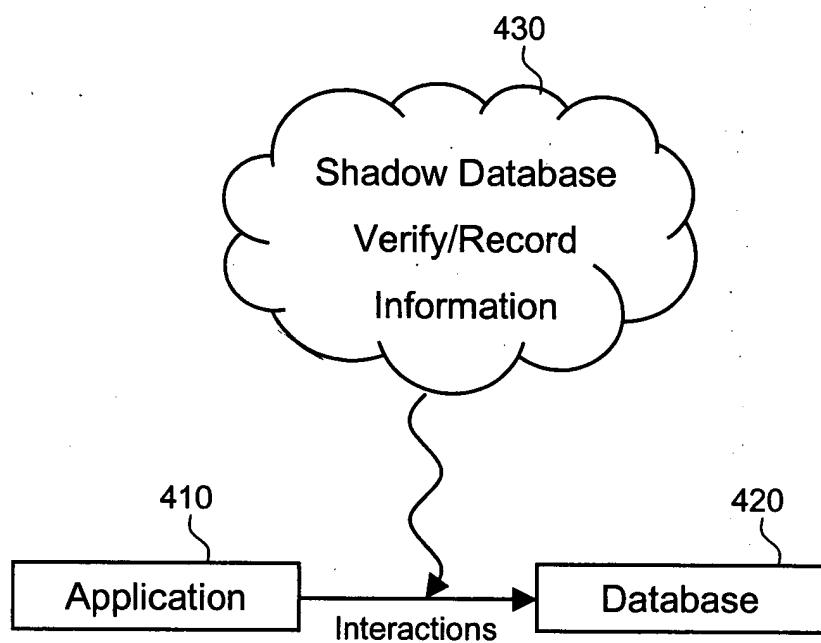


Figure 4

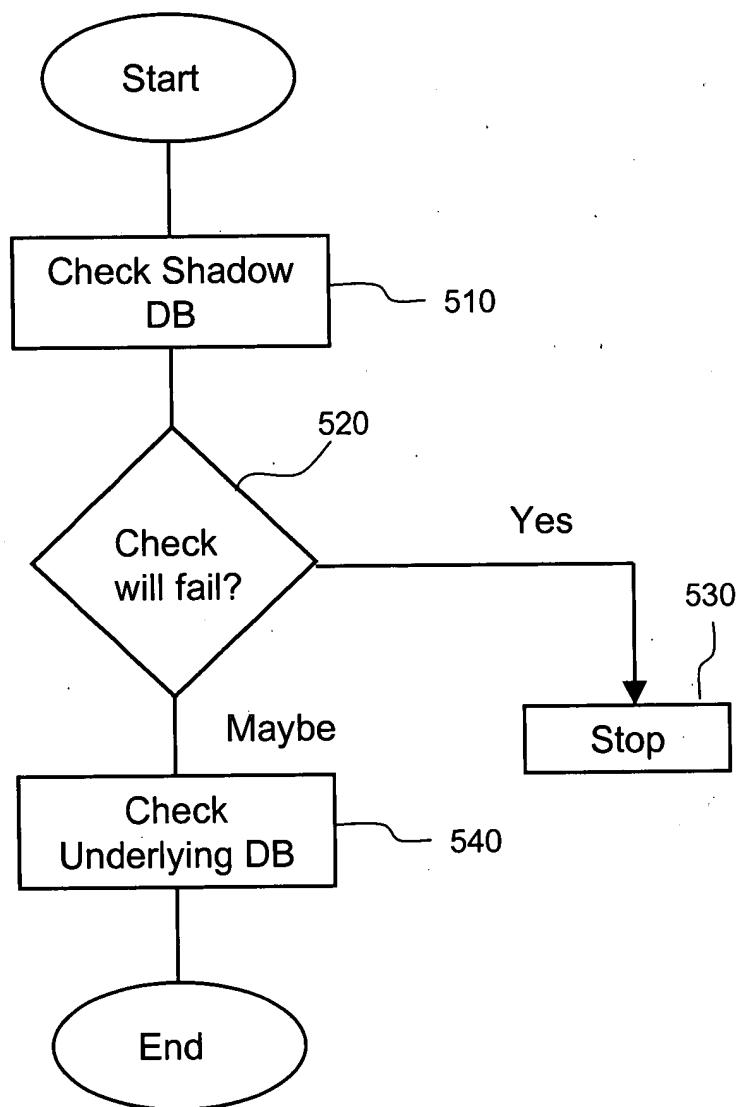
500

Figure 5

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DISCONNECT ALL;
DROP DB FOO1;
CREATE DB FOO1;
CONNECT TO FOO1;

CREATE TABLE ODED.DCODES(
C CHARACTER(1) NOT NULL,
CHECK(
(C='A') OR (C='B') OR (C='C') OR
(C='D') OR (C='E')),
PRIMARY KEY (C)
);

CREATE TABLE ODED.CUSTOMER(
CUSTOMERID BIGINT NOT NULL,
NAME CHARACTER(20) NOT NULL,
CHECK (
( (CUSTOMERID >= 100000) AND
(CUSTOMERID <= 200000) ) OR
( (CUSTOMERID >= 2000000) AND
(CUSTOMERID <= 4000000) ),
PRIMARY KEY (CUSTOMERID) );

ALTER TABLE ODED.CUSTOMER DATA
CAPTURE CHANGES NOT VOLATILE;

CREATE TABLE ODED.DISCOUNT(
DISCOUNTCODE CHARACTER(1) NOT NULL,
PERCENT INTEGER NOT NULL,
DELAY INTEGER NOT NULL,
CUSTID BIGINT NOT NULL,
-- CHECK (
-- (AMOUNT>1) AND (AMOUNT <= 100000)),
-- CHECK ((ORDERNUM >= 0) AND (ORDERNUM
<= 10000000)),
CHECK(
((1<= DELAY) AND (DELAY <=7)) OR ((10
<= DELAY) AND (DELAY <= 30)) OR ((45 <=
DELAY) AND (DELAY <= 60))),
CHECK(PERCENT in (5, 10, 15) OR ((20
<= PERCENT ) AND (PERCENT <= 30))),
CHECK(DISCOUNTCODE in ('A',
'B','C','D','E')),
PRIMARY KEY (CUSTID, DISCOUNTCODE),
FOREIGN KEY (CUSTID) REFERENCES
ODED.CUSTOMER (CUSTOMERID) ON DELETE
CASCADE,
FOREIGN KEY (DISCOUNTCODE) REFERENCES
ODED.DCODES (C)
);

ALTER TABLE ODED.DISCOUNT DATA
CAPTURE CHANGES NOT VOLATILE;

CREATE TABLE ODED.INVENTORY(
ITEMNUMBER CHARACTER(8) NOT NULL,
AMTINSTOCK INTEGER NOT NULL,
CATEGORY VARCHAR(20) NOT NULL,
CHECK (
(AMTINSTOCK >=0) AND (AMTINSTOCK
<=10000)),
CHECK(
( (ITEMNUMBER Like 'EU%') AND
(ITEMNUMBER > 'EU000000') AND
(ITEMNUMBER < 'EU999999')) OR
( (ITEMNUMBER Like 'US%') AND
(ITEMNUMBER > 'US000000') AND
(ITEMNUMBER < 'US999999')) OR
( (ITEMNUMBER Like 'WL%') AND
(ITEMNUMBER > 'WL000000') AND
(ITEMNUMBER < 'WL999999'))),
PRIMARY KEY (ITEMNUMBER) );

ALTER TABLE ODED.INVENTORY DATA
CAPTURE CHANGES NOT VOLATILE;

CREATE TABLE ODED.CUSTOMERCATEGORI
CUSTOMERID BIGINT NOT NULL,
CATEGORY VARCHAR(20) NOT NULL,
-- CHECK (
-- (AMTINSTOCK >=0) AND (AMTINSTOCK
<=10000)),
PRIMARY KEY (CUSTOMERID, CATEGORY),
FOREIGN KEY (CUSTOMERID) REFERENCES
ODED.CUSTOMER (CUSTOMERID) ON DELETE
CASCADE
);

ALTER TABLE ODED.INVENTORY DATA
CAPTURE CHANGES NOT VOLATILE;

CREATE TABLE ODED.ORDER(
ORDERNUM BIGINT NOT NULL,
CUSTID BIGINT NOT NULL,
AMOUNT DECIMAL NOT NULL,
TAX DECIMAL NOT NULL,
DISCOUNTCODE CHARACTER(1) NOT NULL
);

```

Figure 6A

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CHECK ((AMOUNT>1) AND (AMOUNT <=
100000)),
CHECK ((ORDERNUM >= 0) AND (ORDERNUM <=
10000000)),
CHECK((TAX <= .4 * AMOUNT) AND ((TAX =
25) OR (TAX =50) OR (TAX >=100))),
PRIMARY KEY (ORDERNUM),
FOREIGN KEY (CUSTID) REFERENCES
ODED.CUSTOMER (CUSTOMERID) ON DELETE
CASCADE,
FOREIGN KEY (DISCOUNTCODE) REFERENCES
ODED.DCODES (C)
);

ALTER TABLE ODED.ORDER DATA CAPTURE
CHANGES NOT VOLATILE ;

SIGNAL SQLSTATE '7599
('Cannot insert category field ')

CREATE TRIGGER InvTrig1
AFTER DELETE ON ODED.INVENT
REFERENCING OLD AS xxx
FOR EACH ROW MODE DB2SQL
WHEN (EXISTS
(SELECT * FROM
ODED.CUSTOMERCATEGORIES
WHERE
xxx.CATEGORY=ODED.CUSTOMERCATEGOR
TEGORY
))
SIGNAL SQLSTATE '7600
('Cannot delete referenced catego

insert into ODED.INVENTORY
values('EU123456', 10, 'grinders'

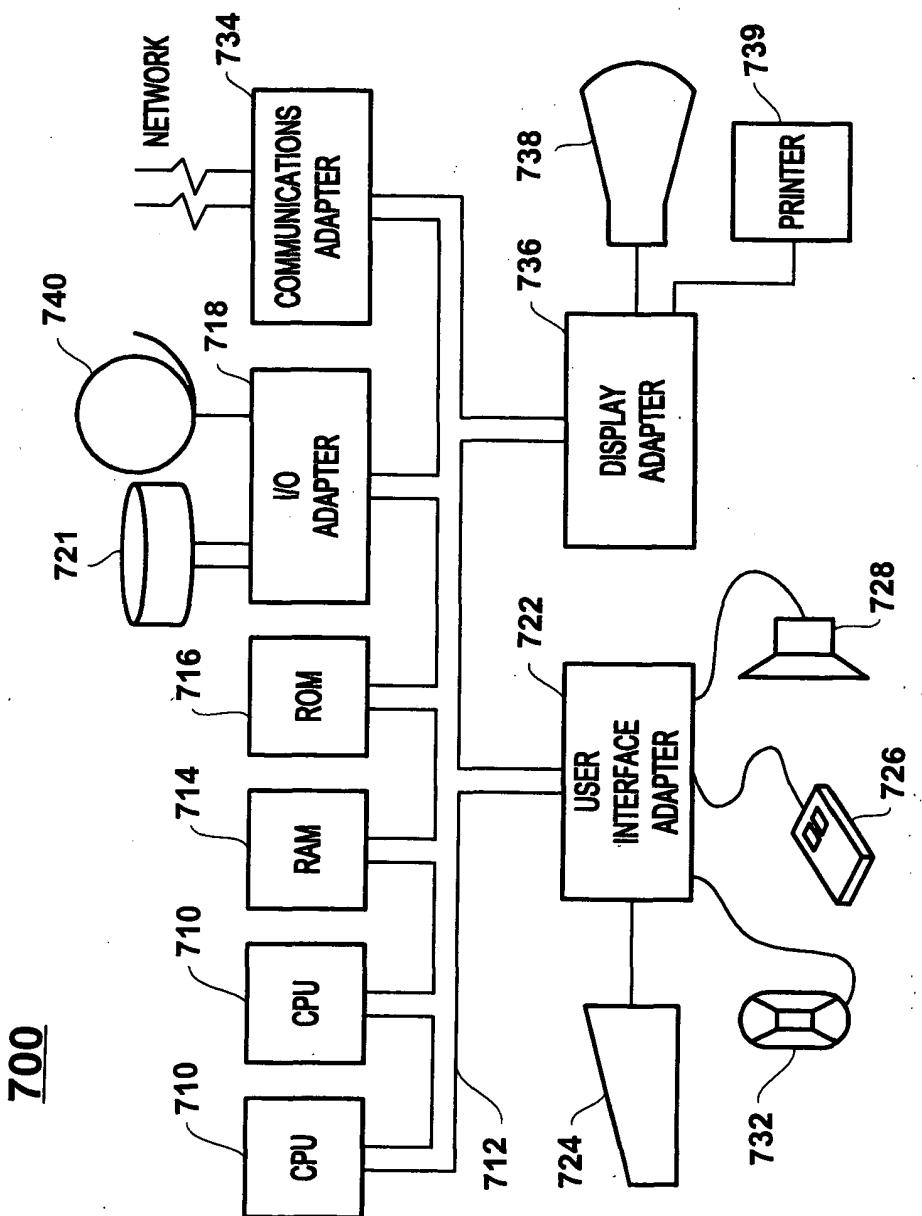
CREATE TABLE ODED.ORDERDETAILS(
ORDERNUM BIGINT NOT NULL,
ITEM# CHARACTER(8) NOT NULL ,
NOITEMSREQUESTED INTEGER NOT NULL,
NOITEMSSHIPPED INTEGER NOT NULL,
NOITEMSRECEIVED INTEGER NOT NULL,
CHECK ((NOITEMSREQUESTED >0) AND
(NOITEMSREQUESTED<101)),
CHECK (NOITEMSRECEIVED <=
NOITEMSSHIPPED),
CHECK (NOITEMSSHIPPED <=
NOITEMSREQUESTED),
PRIMARY KEY (ORDERNUM, ITEM#),
FOREIGN KEY (ITEM#) REFERENCES
ODED.INVENTORY (ITEMNUMBER) ON DELETE
CASCADE,
FOREIGN KEY (ORDERNUM) REFERENCES
ODED.ORDER (ORDERNUM) ON DELETE CASCADE
);

ALTER TABLE ODED.ORDERDETAILS DATA
CAPTURE CHANGES NOT VOLATILE ;

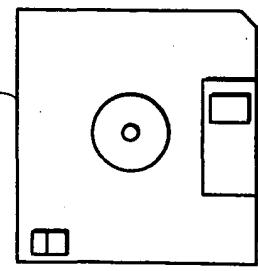
CREATE TRIGGER CatTrigger
AFTER INSERT ON
ODED.CUSTOMERCATEGORIES
REFERENCING NEW AS xxx
FOR EACH ROW MODE DB2SQL
WHEN (NOT EXISTS
(SELECT * FROM ODED.INVENTORY
WHERE
xxx.CATEGORY=ODED.INVENTORY.CATEGORY
))

```

Figure 6B



**Figure 7**



**Figure 8**